

Milestone 18 - Auxiliary Link Spectrum Allocation

A. Assumptions

1. Separate STLs are required for Simulcast & NTSC channels
2. FCC allocates sufficient spectrum for Auxiliaries at time of Final R&O
3. Spectrum may be same as currently used for STLs, etc.
4. Spectrum sharing w/existing video FM STLs is technically possible
5. Simulcast & NTSC Auxiliaries may share existing paths/channels

Task 19 - STL Frequency Search

A. Assumptions

1. Frequency search ultimately successful

Task 20 - STL Construction Permit (CP) & License

A. Assumptions

1. STL CP & license granted in "nominal" time

Task 21 - STL Antenna & Transmission Line Installation

A. Assumptions

1. STL antenna/xmsn line installation delayed for good weather
2. Weather not a factor in installation completion within slack time
3. Adequate mounting space available without significant construction

Task 22 - STL Transmitter & Receiver Installation

A. Assumptions

1. STL transmitter/receiver installation in parallel with antenna/xmsn line
2. Adequate equipment space available in existing facility

Task 23 - Negotiate Telco STL

A. Assumptions

1. Local common carrier can interconnect Studio & Transmitter
2. Circuits available with good reliability & technical characteristics
3. Negotiations in parallel w/microwave frequency search, as backup
4. Microwave frequency search or channel sharing w/NTSC successful

Task 24 - STL Performance Analysis

A. Assumptions

1. STL passes proof-of-performance test on first try
2. Path reliability is good

Milestone 25 - STL Initial Use On Air

A. Assumptions

1. STL put in use for NTSC operations as test
2. If combined STL, helps transition to new system

Task 26 - Encoder Available

A. Assumptions

1. Technical info to start encoder design available at time of NPRM
2. Full technical documentation available at Final Report & Order
3. No commitment to special ICs until Final Report & Order
4. Encoders available in sufficient quantity to meet demand

Task 27 - Exciter/Transmitter Available

A. Assumptions

1. Technical info to start exciter design available at time of NPRM
2. Full technical documentation available at Final Report & Order
3. No commitment to special ICs until Final Report & Order
4. Exciters & transmitters available in sufficient quantity to meet demand

Task 28 - Transmitter Installation

A. Assumptions

1. Transmitters available as needed without difficulty
2. Support facilities must be constructed in new transmitter bldg

Task 29 - Overall System Performance Analysis

A. Assumptions

1. Overall Simulcast system passes proof-of-performance on first try
2. Dummy load & antenna tests

Milestone 30 - Initial Test Signals On Air

A. Assumptions

1. Station goes on air with test signals until Program Test Auth. received
2. Test signals used for field test of new system

Task 31 - FCC Program Test Authority

A. Assumptions

1. FCC grants immediate, automatic Program Test Authorization by FAX

Task 32 - FCC License Grant

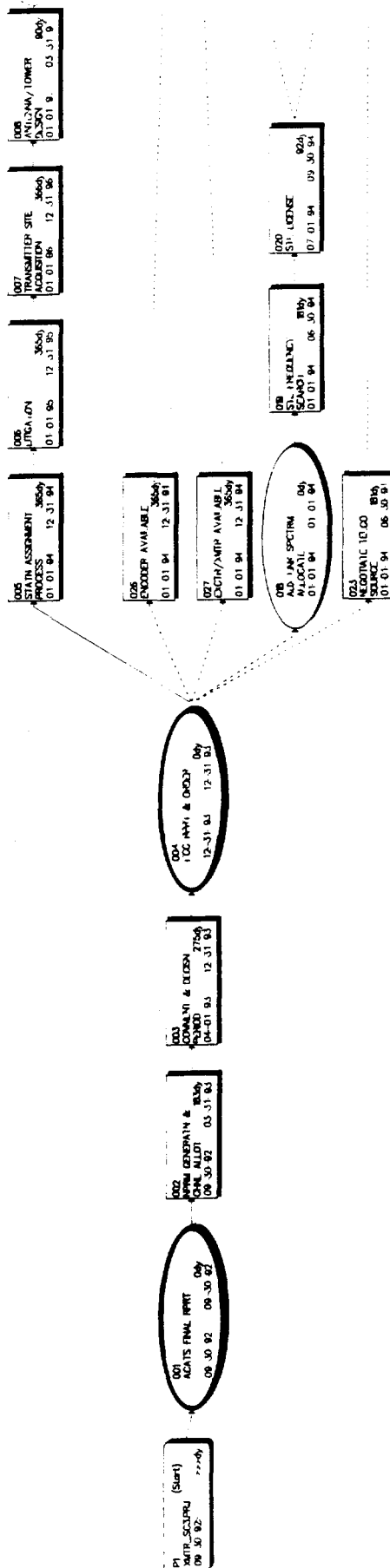
A. Assumptions

1. FCC grants final license with moderately short turnaround

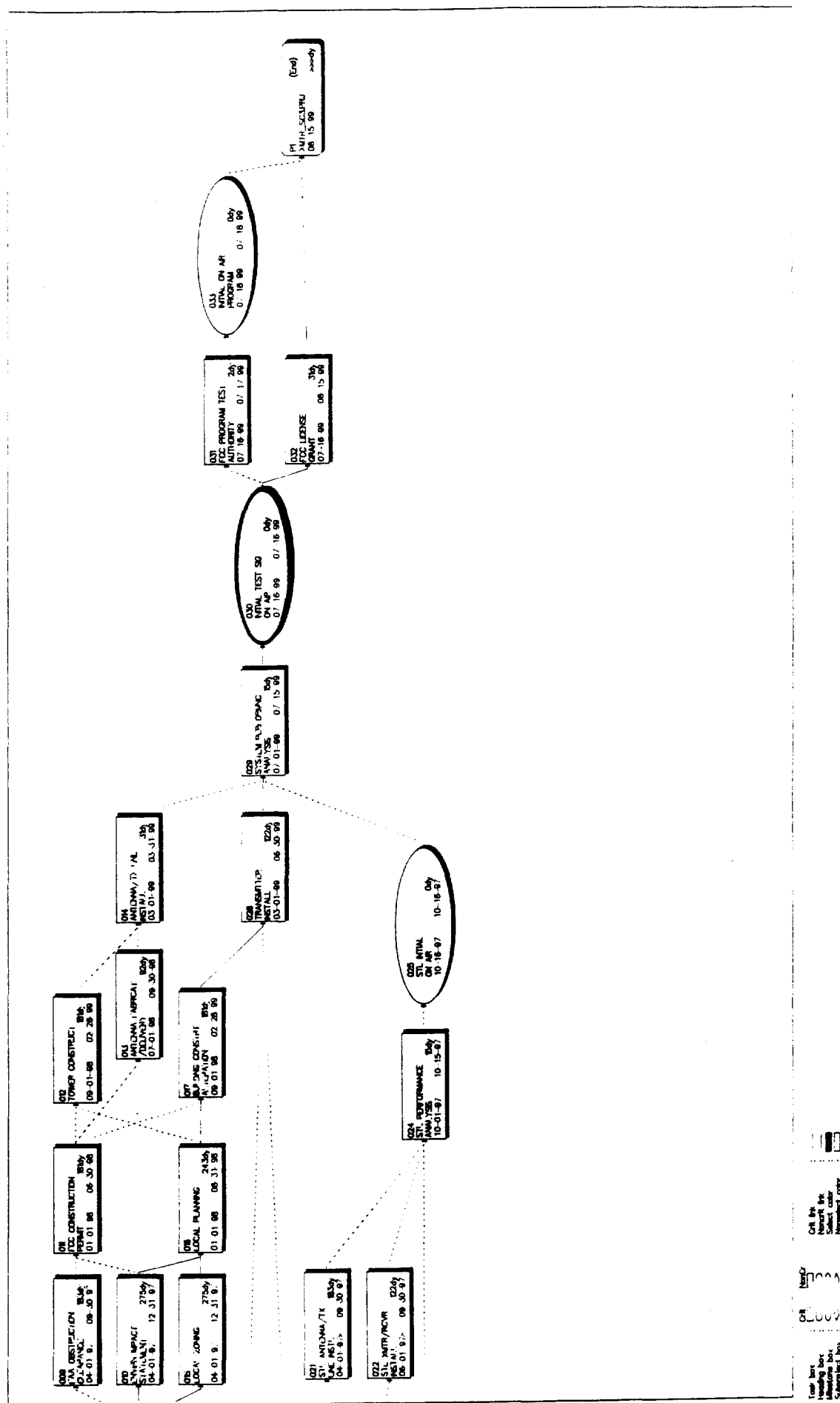
Milestone 33 - Initial Programming On Air

A. Assumptions

1. Program Test permits airing programming until license received



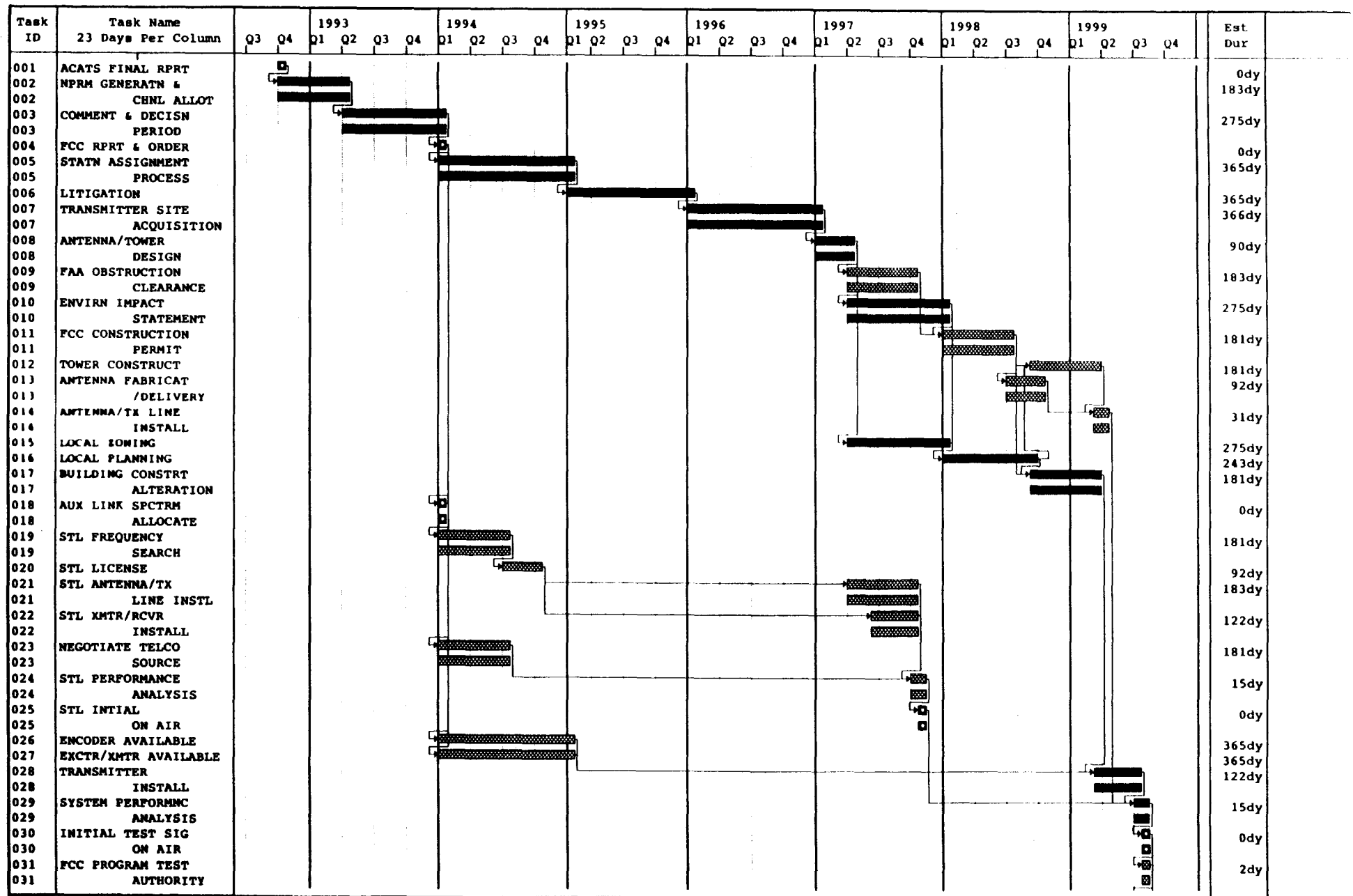
TRANSMITTER SMALLCAST W/NEW TOWER REQUIRED - SCENARIO 3



Task Outline
01-01-92 2:59a

Project: XMTR_SC3.PROJ
Revision: 26

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENRIO 3 - TYPICAL



— Unassigned — Interrupted ■ Noncritical ■ Critical ■ Milestone

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENRIO 3 - TYPICAL

Task ID	Task Name 23 Days Per Column	1993		1994				1995				1996				1997				1998				1999				Est Dur	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
032	FCC LICENSE																											31dy	
032	GRANT																												
033	INITIAL ON AIR																												
033	PROGRAM																											0dy	

IS/WP-2 PERT Chart

Supporting List of Assumptions

Transmitter: Simulcast w/New Tower Required - Scenario 3 - Alternative B

General Assumptions

1. Station Assignment process occurs concurrent with FCC Final Report & Order
2. Station will experience no litigation delays
3. Governmental approval times are "nominal," i.e. very short
4. Station is not involved in multi-station tower facility
5. Station's existing tower has inadequate capacity for additional antenna
6. Existing tower site has insufficient room for additional tower
7. New tower & transmitter building required at new site
8. Local approvals are required for new transmitter building
9. Local approvals are required for new tower
10. Spectrum is ultimately found for station-owned STL
11. Space exists for additional STL antennas at both ends of link

Specific Assumptions

Milestone 1 - Advisory Committee Final Report

A. Assumptions

1. Advisory Committee completes final report on current schedule
2. Advisory Committee report recommends system choice
3. No litigation that impedes process

Task 2 - NPRM Generation & Channel Allotment

A. Assumptions

1. FCC issues NPRM on announced schedule
2. Channels are allotted to cities at release of NPRM
3. FCC accepts Advisory Committee recommendation on system choice
4. No litigation that impedes process

Task 3 - Comment & Decision Period

A. Assumptions

1. Allows time for comments & reply comments
2. Provides time for preparation of Final Report & Order
3. No litigation that impedes process

Milestone 4 - FCC Report & Order

A. Assumptions

1. Final Report & Order confirms choice of single system

Task 5 - Station Assignment Process

A. Assumptions

1. Station channel assignment made concurrently w/Final Report & Order
2. Stations cannot begin designs until after channel assignment
3. No litigation that impedes process

Task 6 - Litigation

A. Assumptions

1. No delay from litigation once Final Report & Order issued
2. No uncertainty of channel assignment for stations

Task 7 - Transmitter Site Acquisition

A. Assumptions

1. Station determines non-usability of existing tower well in advance
2. Station begins search for land in advance of FCC decision
3. No litigation to delay acquisition
4. Suitable space available in even major metropolitan areas
5. Sufficient space quickly found on the market

Task 8 - Antenna/Tower Design

A. Assumptions

1. Station will not begin final design until channel & location are certain
2. Station will move existing NTSC channel to new site
3. Preliminary work done well in advance
4. Tower structure, antenna mounting, & transmission line included
5. Design is for single station on its own tower
6. Modelling of antenna interactions is not necessary

Task 9 - FAA Obstruction Clearance Approval

A. Assumptions

1. Site obtained is away from airports
2. Site obtained is away from flight corridors
3. No FAA control over spectrum-related matters
4. FAA approval granted in "nominal" time

Task 10 - Environmental Impact Statement

A. Assumptions

1. Preparation cannot begin until site location is confirmed
2. Cannot be completed until antenna/tower design is complete
3. Principal concerns are tower aesthetics and radiation
4. Building and site infrastructure are not environmentally significant
5. Same statement can be used for all agencies requiring one

Task 11 - FCC Construction Permit (CP) Issuance

A. Assumptions

1. CP grant dependent on Environmental Impact Statement
1. CP grant dependent on technical design
2. CP grant not dependent on local approvals
3. CP grant in "nominal" time after application

Task 12 - Tower Construction

A. Assumptions

1. Construction can begin as soon as all approvals are received
2. No significant delays for weather
3. Relatively tall tower (1-2,000 feet)
4. Tower large enough for more than just HDTV antenna
5. Tower fully equipped - including elevator, etc.

Task 13 - Antenna Fabrication & Delivery

A. Assumptions

1. Contingent order placed well in advance to hold place for delivery
2. Antenna fab will not begin before CP grant
3. Antenna fab will begin before all local approvals received
3. Antenna manufacturing capacity sufficient to meet demand

Task 14 - Antenna & Transmission Line Installation

A. Assumptions

1. Weather not a factor in installation completion within slack time

Task 15 - Local Zoning Permits

A. Assumptions

1. Zoning Permit required for both tower & building construction
2. Environmental Impact Statement sufficient to satisfy authorities
3. No litigation from local interests to preclude granting of permit
4. Zoning Permit granted in "nominal" time

Task 16 - Local Planning Approval

A. Assumptions

1. Zoning approval required before Planning Approval
2. Plan approvals required for transmitter building
3. Plan approvals required for tower & antennas
4. Plan approvals granted in "nominal" time

Task 17 - Building Construction

A. Assumptions

1. No existing transmitter building at new tower site
2. Building construction is "fast-tracked"
3. Building construction on overtime basis

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Milestone 33 - Initial Programming On Air

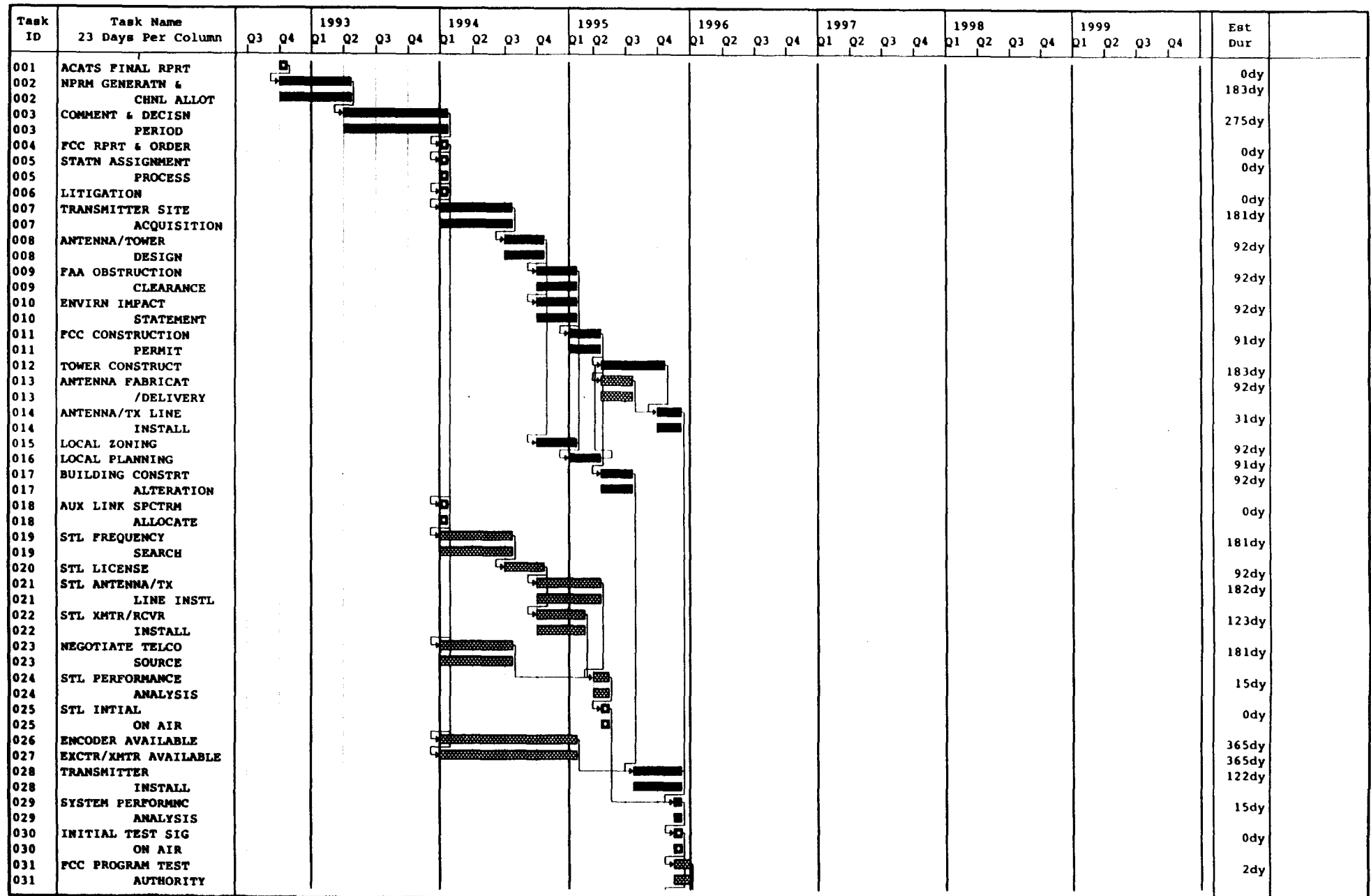
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Task Outline
01-01-92 3:15a

Project: XMTRMSCJ.PRJ
Revision: 27

XMTR: SIMULCAST W/NEW TOWER REQUIRED - SCENARIO 3 - MINIMUM



— Unassigned — Interrupted ■ Noncritical ■ Critical ■ Milestone

Task Outline
01-01-92 3:16a

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Project: XMTRMSC3.PRJ
Revision: 27

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENRIO 3 - MINIMUM

Task ID	Task Name 23 Days Per Column	1993		1994				1995				1996				1997				1998				1999				Est Dur	
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033	PROGRAM																												

— Unassigned

— Interrupted

■ Noncritical

■ Critical

■ Milestone

IS/WP-2 PERT Chart

Supporting List of Assumptions

Cable Television

General Assumptions

1. Cable TV headend equipment vendors will begin development work and testing on new equipment (processors, modulators, and scrambling systems) as soon as proponent is chosen for standardization.
2. Cable TV networks and broadcasters will announce plans to provide HDTV service.
3. Cable TV headends will be reconfigured as required in a staged scenario.
4. Cable TV local origination and local "ad insertion" will closely follow the small TV broadcast studio scenario.
5. New HDTV standard will be compatible with existing NTSC distribution system, therefore: Cable TV distribution facilities (coaxial, microwave, and fiber) will not require rebuilding, if channel capacity is available.
6. Existing Cable TV coaxial distribution facilities are currently either being rebuilt or are being replaced with fiber to provide a higher standard of service, at a 20 per cent per year rate, and with additional channel capacity.
7. New Cable TV distribution facilities are being constructed with a higher standard of service and additional channel capacity. The economics of compression as a method to multiplex in order to gain channel capacity are not clear, and, furthermore, the technology is not considered here.
8. Change in consumer devices will be gradual, therefore: The changeout of set-top converters/descramblers will also be gradual.

Specific Assumptions

Task XXX - Add HDTV Simulcast broadcast channel to cable TV system; existing reception antenna.

A. Assumptions

1. Cable TV system has channel capacity to add new HDTV channels.
2. Simulcast will be transmitted from same tower location as NTSC transmission, therefore does not require new reception antenna.
3. Install new equipment without interruption of other channels.
4. Headend building has existing physical plant (space, HVAC, electrical supply) capacity to add new equipment.

B. Equipment

1. Heterodyne processor

Task XXX - Add HDTV simulcast broadcast channel to cable TV system on a different cable channel; new reception antenna.

A. Assumptions

1. Cable TV system has channel capacity to add new HDTV channels.
2. Simulcast will be transmitted from different tower location or on a different channel from NTSC transmission, therefore requires new reception antenna.
3. Install new equipment without interruption of other channels.
4. Headend building has existing physical plant (space, HVAC, electrical supply) capacity to add new equipment.

B. Equipment

1. Heterodyne processor
2. Reception antenna

Task XXX - Add HDTV simulcast satellite channel to cable TV system; existing reception antenna.

A. Assumptions

1. Cable TV system has channel capacity to add new HDTV channels.
2. Simulcast will be transmitted from same satellite as NTSC transmission, therefore does not require new reception antenna.
3. Install new equipment without interruption of other channels.
4. Headend building has existing physical plant (space, HVAC, electrical supply) capacity to add new equipment.

B. Equipment

1. Satellite receiver
2. Modulator
3. Scrambling encoder

Task XXX - Add HDTV simulcast satellite channel to cable TV system; new reception antenna.

A. Assumptions

1. Cable TV system has channel capacity to add new HDTV channels.
2. Simulcast will be transmitted from different satellite as NTSC transmission, therefore requires new reception antenna.
3. Install new equipment without interruption of other channels.
4. Headend building has existing physical plant (space, HVAC, electrical supply) capacity to add new equipment.

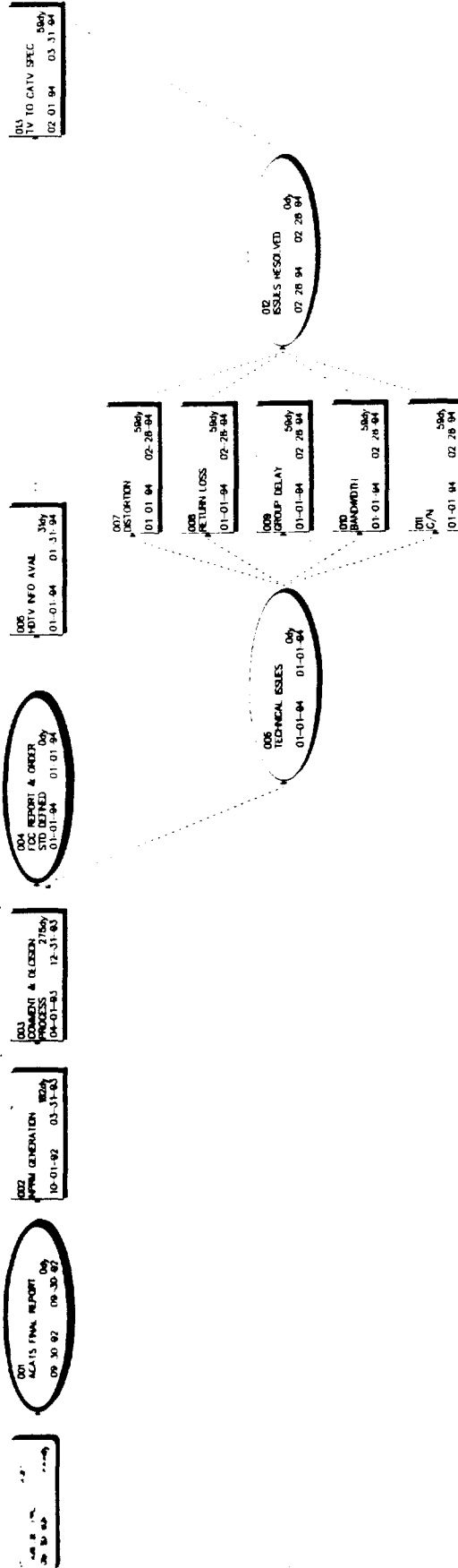
B. Equipment

1. Satellite antenna
2. LNBS
3. Satellite receiver
4. Modulator
5. Scrambling encoder

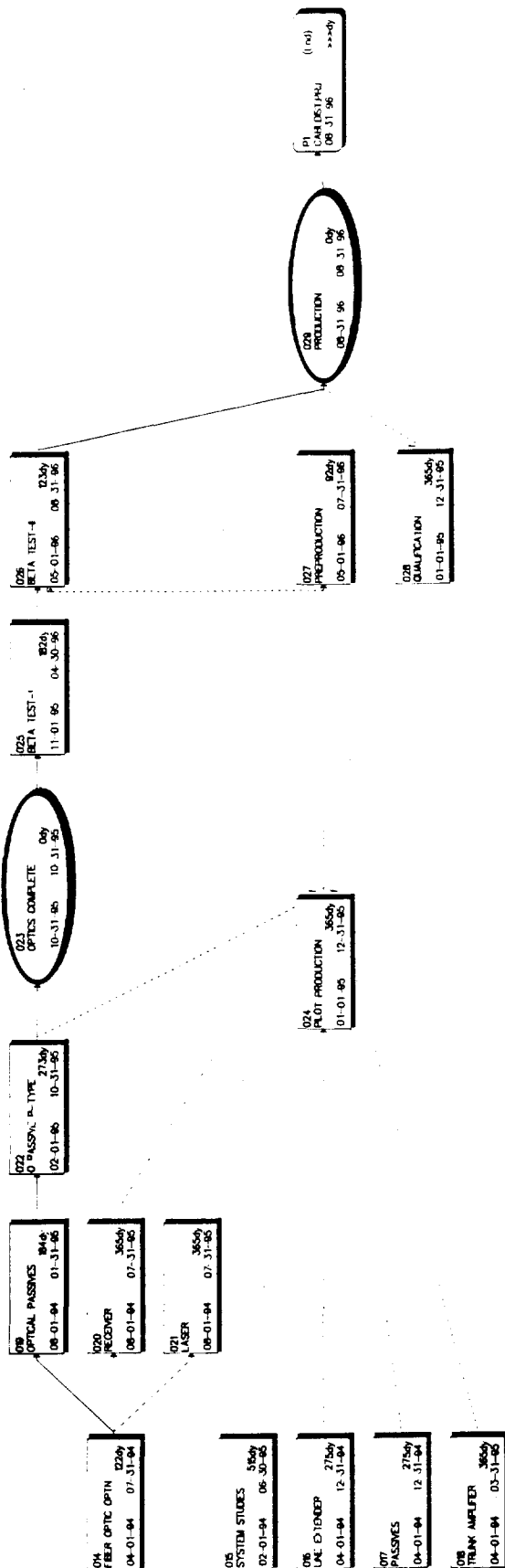
Task YYY - Vendor Development Design and produce cable television headend receiving equipment (heterodyne processor, satellite receiver, modulator).

1. HDTV standard has been defined, and technical information released (licensed).
2. Technical issues resolved. (Distortion, bandwidth, group delay, return loss.)
3. Industry standard developed and recognized. (Broadcast to CATV specification.)

CABLE, HDTV DISTRIBUTION SYSTEM

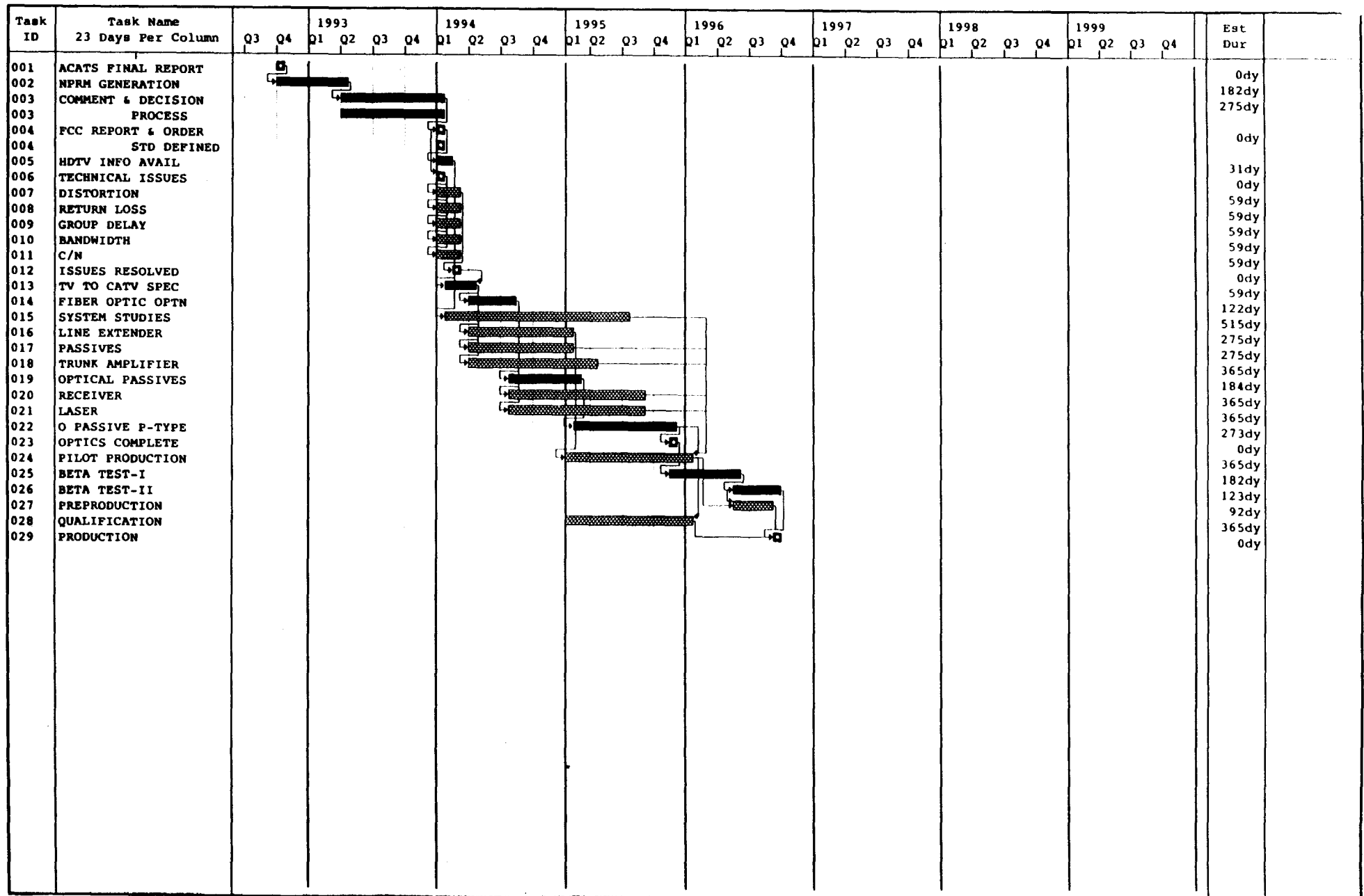


CABLE: HDV DISTRIBUTION SYSTEM



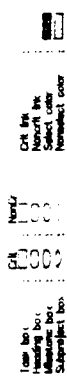
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 Duration: 11 days
 Start Date: 08-31-86
 End Date: 09-30-86
 Status: Not Started

CABLE: HDTV DISTRIBUTION SYSTEM



— Unassigned — Interrupted ■ Noncritical ■ Critical ■ Milestone

Revision 17



CABLE: HDTV CONVERTER DEVELOPMENT SCHEDULE

